

Amendments to the Specification:

On page 1, at line 12, after the listing of the inventors, and prior to the section entitled "STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH AND DEVELOPMENT", please insert the following paragraph:

CROSS REFERENCE TO RELATED APPLICATIONS

This application is a divisional of co-pending U.S. Application Serial No. 10/004,782, filed December 4, 2001, which is incorporated herein by reference in its entirety, and is related to copending U.S. Application Serial No. 10/417,244, filed April 16, 2003.

On page 1, 17-18, under the section entitled "STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH AND DEVELOPMENT", please amend the paragraph set forth therein as follows:

This invention was made with government support under ~~NSF Grant CHE-0107178~~ Air Force Grant F33615-97-D-5009. The United States government may have rights in this invention.

Please replace the paragraph on page 14, lines 10-21 with the following paragraph:

As used herein, the term "blend" refers to a combination of at least one conducting polymer component with at least one other non-conductive polymer component, wherein the molecular intermixing of the polymer components is insufficient to significantly alter the physical properties of the individual components of the blend.

As used herein, the term "copolymer" refers to a reaction product of at least two polymer components whereby the physical properties of each of the components is significantly altered, and the covalent linkage between the polymer segments allows phase separation to be limited at the molecular level to form a more homogeneous product relative to a polymer blend. The phrase "intrinsically conductive", as used herein, refers to an electrically conductive ~~thiophene~~-block copolymer having at least one conducting segment, such as polythiophene, polypyrrole, poly-p-phenylenevinylene, and the like, attached thereto.

Please replace the paragraph on page 28, lines 8-19 with the following paragraph:

Block copolymers of the present invention, as illustrated in Schemes 3 to 5, are intrinsically conductive block copolymers (i.e. are ~~thiophene~~-block copolymers having a conducting segment, such as polythiophene, polypyrrole, poly-p-phenylenevinylene, and the like, attached thereto), such as diblock and triblock copolymers (Schemes 3 and 4, respectively) and polyurethane copolymers (Scheme 5). As described in detail herein, these intrinsically conductive block copolymers have been found to exhibit conductivities that range from a low of 10^{-8} S/cm for certain applications to as high as several hundred S/cm or more, but typically range from 10^{-2} S/cm to 150 S/cm. Particular embodiments of the present invention display conductivities ranging from 1 S/cm to 150 S/cm, 5 S/cm to 150 S/cm, and 10 S/cm to 150 S/cm. The block copolymers of the present invention also have excellent film forming and good

mechanical properties including elasticity in the polyurethane samples when the weight percentage of HT-PHT is moderate to low.

Please replace the paragraph on page 35, line 1 (having the equation) with the following:

$$\sigma = 1/f_p = 1/(4.53 \cdot R \cdot W)$$

Please replace the paragraph outlining the description to Table 4, page 36, lines 15-17, with the following paragraph:

Table 4. ~~Characterization~~ Characterization Data of the Compositions, Molecular Weights, Molecular Weight Distributions and Electrical Conductivity of Triblock Copolymers Containing Regioregular Head-to-Tail ~~Polyhexylthiophene~~ Polyhexylthiophene (PHT).